



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/541,352

07/05/2005

Gerhard Jonke

2002P00148WOUS

8235

28204

7590

07/27/2006

SIEMENS SCHWEIZ AG  
I-47, INTELLECTUAL PROPERTY  
ALBISRIEDERSTRASSE 245  
ZURICH, CH-8047  
SWITZERLAND

EXAMINER

CABRERA, ZOILA E

ART UNIT

PAPER NUMBER

2125

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/541,352 | <b>Applicant(s)</b><br>JONKE ET AL. |  |
|                              | <b>Examiner</b><br>Zoila E. Cabrera  | <b>Art Unit</b><br>2125             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Final Rejection*

1. Claims 1-18 are presented for consideration.

The rejection with respect to claims 1-18 is maintained.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 7-8, 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Yoriki et al. (US 6,640,431 B1)**.

Regarding claim 1, **Yoriki** discloses a multiple insertion head for mounting components onto substrates, comprising a carrier arranged such that it can rotate about a rotational axis (Fig. 2; Col. 1, lines 18-23), and a plurality of receiving tools arranged such that they can be moved in a mounting direction at an angle to the rotational axis (fig. 2, element 90); the receiving tools being arranged on the carrier and arranged so as to receive the components (Col. 1, line 59 to Col. 2, line 7), such that each receiving tool is provided with at least one of an active drive and sensors (Fig. 14, drives and sensors).

As for claims 2-3, 6, 7-8, 14-18, **Yoriki** further discloses,

2. Multiple insertion head according to claim 1, with each receiving tool having its own rotary drive by means of which received components can in each case be rotated about a tool axis arranged at an angle to the rotational axis (D) of the multiple insertion head (Fig. 14, nozzle rotating servo motor).

3. The multiple insertion head according to claim 1, wherein each receiving tool comprises a vacuum generator (Col. 1, lines 60-61, suction nozzle).

6. The multiple insertion head according to claim 1, further comprising a blast air vacuum device arranged in a receiving mounting position of one of the receiving tools, the vacuum device further arranged such that therein components can be received or mounted by means of the receiving tool located in the receiving mounting position, the receiving tool being connected such that an additional vacuum can be applied or generated to the receiving tools for receiving the components or in addition a blast air impulse while mounting the components in the receiving tool located in the receiving mounting position (Col. 1, lines 60-51, i.e. one suction nozzle holding, by suction, an EC; Col. 16, lines 5-9).

7. The multiple insertion head according to claim 1, wherein each receiving tool comprises a tool shaft embodied as a hollow shaft running coaxially to the tool axis and

Art Unit: 2125

a rotary sensor arranged so as to detect an angle position of the tool shaft (Col. 16, lines 19-34 and lines 53-61).

8. The multiple insertion head according to claim 7, wherein each tool shaft comprises a vacuum pipettes at a distal end range (Col. 16, lines 6-15).

14. The multiple insertion head according to claim 1, wherein the carrier comprises at least one control device arranged so as to control and/or regulate the active drives and/or sensors (Fig. 14).

15. The multiple insertion head according to claim 14, wherein the control unit comprises at least one digital signal processor by means of which one or a plurality of the active drives or sensors can be controlled (Fig. 14).

16. The multiple insertion head according to claim 1, further comprising , a linear motor arranged such that a receiving tool found in the receiving mounting position can be moved in the mounting direction provided that the linear motor is engaged in the receiving tool (Fig. 14).

17. The multiple insertion head according to claim 16, further comprising an engaging element provided in each receiving tool so as to engage in an engaging piece of the runner of the linear motor (Col. 18, lines 42-46 and lines 64-66).

Art Unit: 2125

18. The multiple insertion head according to claim 16, further comprising an additional retracting means interacting with the linear motor by means of which a runner of the linear motor is pretensioned by means of a spring tension against the force of gravity and in which the pretensioning is compensated for by compressed air when the insertion head is in operation (Col. 18, lines 42-62).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoriki et al. (US 6,640,431 B1)** in view of **Gieskes et al. (US 2004/0074085 A1)**.

**Yoriki** discloses the limitations of claims 1 and 3 above but fails to disclose the limitations of claims 4-5. However, **Gieskes** discloses such limitations as follows:

4. The multiple insertion head according to claim 3, wherein the vacuum generators comprises a Venturi tubes and the carrier comprises a hollow shaft running coaxially to the rotational axis to which the receiving tools are fitted such that compressed air can be conveyed through the hollow shaft of the carrier to the Venturi tubes ([0026]).

5. The multiple insertion head according to claim 3, wherein the Venturi tubes is connected to a regulator to control pressure ([0028]-[0029]).

Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Yoriki** with the integrated air flow control for a pick and place spindle assembly as taught by **Gieskes** because it would provide an improved system by minimizing the time required for the vacuum for air pressure to be applied to the nozzle tip ([0011]).

3. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoriki et al. (US 6,640,431 B1)** in view of **Asai et al. (US 5,588,195)**.

**Yoriki** discloses the limitations of claim 1 above but fails to disclose the limitations of claims 9-13. However, **Asai** discloses such limitations as follows:

9. The multiple insertion head according to claim 1, further comprising a rotationally symmetrical energy and data transmission device arranged between the carrier and a housing of the multiple insertion head, the transmission device arranged such that at least one of active drives and sensors can be supplied with energy and by which the data from the sensors and the data to the sensors can be transmitted with a first transmitter part being permanently fitted to the housing of the multiple insertion head and a second transmitter part being permanently fitted to the carrier in such a way that it can rotate (Abstract; Fig. 13; Col. 2, lines 55-67).

Art Unit: 2125

10. The multiple insertion head according to claim 9, wherein the transmission device comprises at least one slip ring (Col. 2, lines 2-9).

11. The multiple insertion head according to claim 9, wherein the data transmission device comprises one pair of electromagnetic transmitters and one pair of capacitive transmitters arranged rotationally symmetrical around the rotational axis of the multiple insertion head and by means of which there is non-contact transmission of both the energy and the data (Col. 3, line 40 to Col. 4, lines 6).

12. The multiple insertion head according to claim 11, wherein the capacitive transmitter, comprises a plate-shaped antenna in the first transmitter part and in the second transmitter part the first transmitter part the electromagnetic transmitter comprises a circular magnetically conductive body with a u-shaped cross section open in the direction of the carrier and a circular magnetically conductive body in the second transmitter part comprising a rectangular cross section which is arranged in such a way in the opening of the first transmitter part that the direction of the magnetic field used for the transmission of energy is at right angles to the direction of the electrical field used for the transmission of data (Fig. 8, element 316).

13. The multiple insertion head according to claim 9, comprising at least one polished disk arranged on the housing and on the carrier such that the polished disks are arranged immediately next to each other so that compressed air and a vacuum can be



applied from external vacuum generators to the active drives of the carrier (Col. 9, lines 30-44).

Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Yoriki** with the electronic component mounting apparatus of **Asai** because it would provide an improved mounting apparatus with a high durability (Col. 1, lines 6-10; Col. 2, lines 25-31).

#### ***Response to Arguments***

4. Applicant's arguments filed May 2, 2006 have been fully considered but they are not persuasive. Applicant contends, on Page 6, that Yoriki does not disclose that "each receiving tool has its own active drive and/or sensors." And further argues that "Advantageously, each receiving tool can be moved and controlled individually, and components can be mounted independently of external actuators." . Applicant admits, Page 6, that Yoriki discloses that only the receiving tool at a certain rotational position is coupled to a drive or sensor.

Examiner disagrees because Yoriki discloses active drive and/or sensors for each mounting head 50 and 52 (Fig. 1; Fig. 14; Col. 14, lines 50-58). Yoriki discloses that since the two mounting heads 50,52 have the same construction only the EC mounting head 50 and the X-Y robot 62 is described. Please note that claim 1 is so broad that it only requires that the receiving tool is provided with at least one active

Art Unit: 2125

drive and sensor and as applicant admits Yoriki discloses that the receiving tool is coupled to a drive or sensor at a certain rotational position.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., each receiving tool can be moved and controlled individually, and *components can be mounted independently of external actuators*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

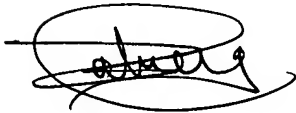
**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2125

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (571) 273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

A handwritten signature in black ink, appearing to read 'Zoila', is enclosed within a hand-drawn oval. The signature is stylized with a horizontal line through the middle.

Zoila Cabrera  
Primary Examiner  
7/24/06